

# Journal of Economic and Social Thought

[www.kspjournals.org](http://www.kspjournals.org)

Volume 7

March 2020

Issue 1

## Health and economic outcomes of COVID 19

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**Abstract.** The paper undertakes a detailed analysis of health and economic outcomes of COVID 19 pandemic. The paper explains the need for governments to implement steps like partial lock downs in major metropolitans of the world to safe guard the public and contain the outbreak. The paper discusses the economic risks and opportunities for both developed and developing countries due to this ongoing pandemic. There is a risk of a recession and thus the author presents few steps that the governments and institutions of international governance can take to prevent a steep trough in business cycle. For a country like Pakistan, economic response to the pandemic may also include improvement of regional ties, especially with neighboring India; creating thriving domestic economy by promoting entrepreneurship and further strengthening domestic and regional commerce.

**Keywords.** Health economics, Pandemic, Economic outcomes, Covid-19.

**JEL.** H51, H75, I00, I30.

### 1. Introduction

COVID 19 epidemic started in Wuhan, China in late 2019 from a contagious virus that is mutated version of Corona virus. By late January China locked down the Wuhan city and by March the country effectively controlled the spread of the epidemic in not only other cities of the country but in Wuhan itself. However due to the world being interconnected through land, sea and air routes, the virus had spread to the whole world where as Western countries are most effected by COVID 19 by March 2020. The governments in US and Europe have land locked their countries against international travels while measures to shut down the cities are being considered. This has created an impression that there is a panic among most developed countries of the world against the Virus outbreak.

However, one must consider the pattern among COVID 19 patients. In Wuhan and now in other parts of the world it is noted that above 90 percent of the COVID 19 patients, the virus has not been fatal but resulted in mild influenza suggesting that overwhelming majority of the patients' immune systems fight the virus effectively and they get back to their healthy selves. For only a very small percentage of people, it is observed that there are drastic outcomes from COVID 19 because of their weaker immune systems because of older age or other health and respiratory related issues.

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Despite low levels of mortality rate of COVID 19, the response to this epidemic has been unprecedented by the governments all around the world. One need to point out that the response is not an outcome of panic but it confirms the commitment by these governments that saving life of every citizen in their country is of paramount importance. The governments by using these precautions are ensuring that everyone is protected by this epidemic till the vaccine against COVID 19 is introduced in the market or the virus itself subsides. It is the contagious nature of COVID 19 as it can penetrate through human touch and any one can be exposed to it if social distancing is not practiced. So the precautions by measures like shutting down borders of the country or the cities and asking people for social distancing is all about making sure that the most vulnerable among the population are protected against the virus.

There are drastic economic outcomes that this precautionary measures may create but after all life is more important than material and economic challenges can be met by prudent economic measures through direct government interventions like Cash handouts, tax holidays, subsidies to the businesses etc. So there is no need to panic by the citizens and every one should adhere to the advice of relevant authorities and the government.

The government of Pakistan has been successful in its early prevention measures against the COVID 19 spread through Wuhan Province and China. However, as Iran became the next victim of COVID 19 by February 2020, it was nearly impossible to implement the same strategy against the spread of the virus. Partly because Iran is a country struggling with a poor economy meaning that its health sector is not prepared to take contingency measures against the spread of virus in the same lines as China. So Pakistan had no option but to allow Pakistani citizens to enter into its borders where many had been suffering from COVID 19. By March the government agencies took stringent measures to prevent the virus spreading among its population. These measures ranged from closing down educational institutions, imposing bans on public gatherings that are more than forty people while also opening many quarantine centers all across the country. The patients that have been affected by COVID 19 is still a very manageable number that is less than 10,000. However due to the virus that is wide spread in the world, many Pakistani citizens that are travelling back to Pakistan especially from Iran may pose a risk that the virus may take a higher toll.

According to the author first 30 days had been vital to know whether Pakistan has been able to control the spread of COVID 19. Following measures are important bench mark indicators to consider in this respect.

1. The world has been able to control the spread of the virus.
2. Pakistani government is effectively able to quarantine the Pakistanis coming from Iran or other countries where there is the outbreak.
3. Pakistanis with no travel history that are effected by the virus are successfully quarantined.

4. The general population practice measures like social distancing effectively so that the curve is flattened against COVID 19.

5. As a consequence, no new patients of COVID 19 are reported.

If we consider all these five points, they will ensure that Pakistani government had been successful in controlling the spread of the virus.

## **2. COVID 19 and its treatments**

After the diagnosis of any disease, the next step is to finding its cure. Generally human body has been programmed to resist viruses that exist outside of human system. Through millions of years of evolution, the cells within human body have retained memory to fight viruses that may be injurious to our health. However, viruses may mutate and sometimes it is possible that new viruses exploit lack of information within cells and thus may attack human body in harmful ways. The first and foremost need and response of the medicine is to create targeted anti bodies against any virus that is akin to helping our body fight with the out born disease. The prescription medicines help human body fight disease or a virus by creating anti bodies. However, one may note that prescription medicine is not a preventive measure against the virus but it is used once the virus is contracted and the symptoms of the disease are evident. Thus medicine against COVID 19 that creates anti bodies to fight against the virus is only useful for patients that have contracted the disease. A medicine does not work for healthy individuals. Considering the wide spread impact of COVID 19, this particular virus has very high rates of contraction through socialization. A small but significant number of population have been observed to have high mortality rates. In this scenario, finding and introducing a medicine that creates antibodies against COVID 19 in case of sickness is also a very timely medical intervention nevertheless. However, medication is not the cure for COVID 19 since this virus is not only new but it has a very high incidence of contractions as it is evident from pandemic outcomes all around the world. A vaccine is needed against COVID 19, that can serve the purpose to immune everyone against it. A vaccine basically changes the cellular information in human bodies to the benefit of our immune system that then can create antibodies naturally against the attack of the virus. To introduce a vaccine, the information within the virus at cellular levels are exploited to the benefit of human immune system. Though it is a simple procedure, inventing the right vaccine goes through many trials. The artificially guided mutations that a vaccine undertakes to create immunization against a certain virus need to only target the virus and should not inadvertently create outcomes that may be injurious to human health. In simple words, human body primarily carries out chemical reactions that result in function of our brain and the body with a perfect balance and harmony with each other. An inadvertent amount of chemical that may disturb this balance may have drastic effects on both body and mind. One may refer to injurious outcomes as drug over dose or chemical overdose. A vaccine needs to go through many trials to confirm

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whether it is suitable for human body under different circumstances and it has no inadvertent harmful effects on the body and the mind. The trials may take up many years of observation and in case of COVID 19 it is expected to take at least a year or two. In the meanwhile, the most needed interventions against COVID 19 are introduction of medicine that can be given to the patients, ventilators to help intensive care patients, testing kits to know the spread of the virus. Over all, in the near future the most effective preventive measure till the vaccine is introduced is social distancing that breaks the chain of contraction and flattens the curve.

### **3. Flatten the curve means different for different regions**

As the data is emerging from different regions, the pattern among COVID 19 cases is different for example in USA and South Asia. In case of USA COVID 19 cases have been increasing at an increasing rate. Whereas for South Asia the data suggests that rise in cases is following decreasing return to scale suggesting less steep rise in COVID 19 cases on average. As a percentage of total population, the rise in COVID 19 cases in USA has been on a rising trend as can be seen from point A in the diagram below. Thus for USA, the flattening of curve currently means that the rate of change of COVID 19 cases move from an increasing rate to a constant rate. This means that COVID 19 cases would still be rising but at a proportionally constant rate than before. For example, if 100 cases are reported today. The same amount of cases would be reported the next day. In contrast for South Asia, the rate of increase of COVID 19 cases as a proportion to population is decreasing. Thus the flattening of the curve suggests that no new cases of COVID 19 are reported. Though the curve is not flattened for both these regions it is important to note that it means different for these two regions.

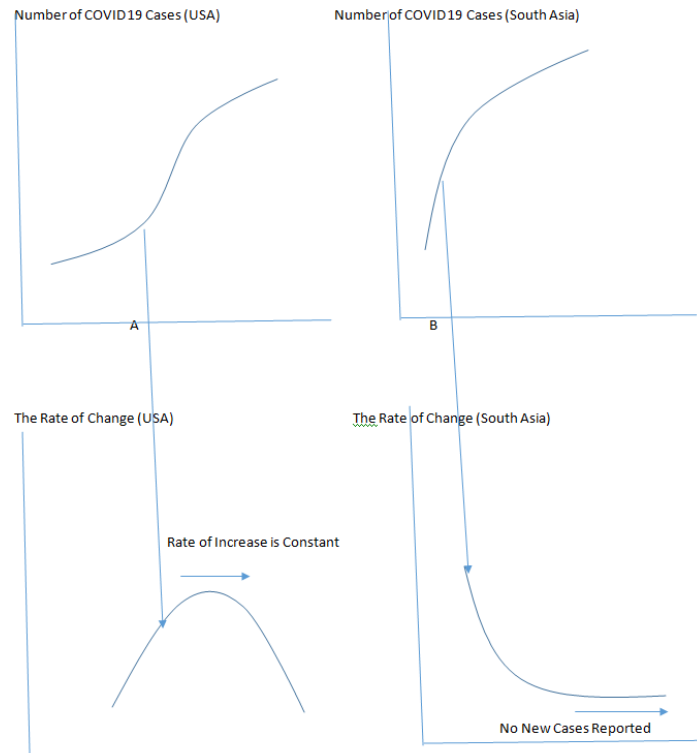


Figure 1. Flatten the curve means different for different regions

#### 4. Patterns in COVID 19 cases in Pakistan

There is lack of understanding among the public against generating a wide spread awareness regarding the safety measures against COVID 19 pandemic like social distancing. The most important reason is the patterns in the data emerging of the infections in Pakistan that is in contrast to other countries like USA. Since there is more severity in number of infections in former regions, there is an impression that Pakistani population is generally immune to COVID 19 virus. Though it is too early to draw definite conclusions out of this disparity in data, it is necessary for the public to adhere to the opinions of local health agencies and representatives of the government.

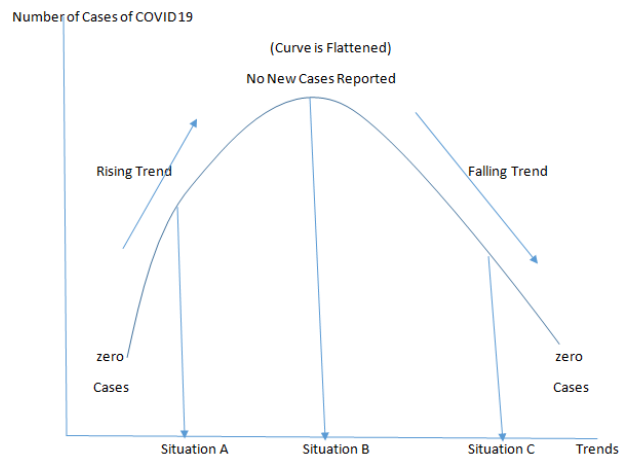


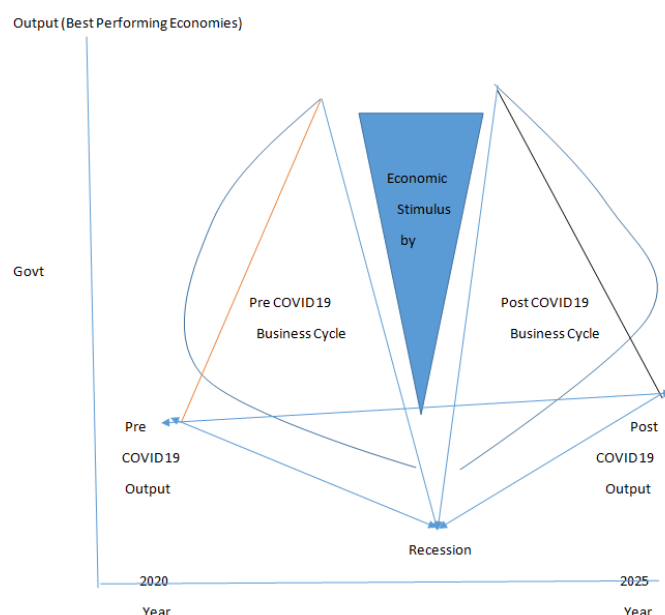
Figure 2. Flattening the Curve

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Pakistani population is nearly 200 million people strong. The total number of COVID 19 cases that are reported is around 5000 people. On the face of it, this small number of cases out of total population makes up less than 0.001% of the population suggesting that it is by no means a statistically significant number to be considered for any significant response by state institutions much less towards current situation of the country that has gone into a partial lock down whereas resources and attention by both government and media has been concentrated on this issue. Statistically speaking, everything to an average citizen of Pakistan may look over blown about COVID 19. However, the public needs to understand the kind of information streaming through national and international stake holders including Pakistani government, health agencies and media outlets. COVID 19 is a pandemic due to high rates of contractions of the virus. The data also shows that from around a dozen patients in February, now there are more than 5000 reported cases of COVID 19. This amounts to an increase of 500 percent. The pattern within contractions has not been determined yet not only in Pakistan but in any of the countries that are suffering more due to this Pandemic like in case of USA or EU. It is a new virus and lot of medical research is underway to know about its nature. However, a general rule as in case of other pandemics recorded in last 100 years, the most reliable prevention against a pandemic in absence of a vaccine is to implement measures like social distancing that flattens the curve. The meaning of this technical term is if the infections are happening at an increasing rate than first response is to decrease the rate through taking steps that breaks the cycle of infection. Social distancing is the best method to adopt in the absence of a Vaccine. The rate of COVID 19 cases are dropped actually means less and less people have contracted the virus. The above diagram explains the phenomenon of flattening the curve. Currently Pakistan is in Situation A, where the COVID 19 is spreading at increasing rate and this is irrespective of the small sample of 5000 patients. As explained above the rate of increase is about 500% since the first patient is diagnosed with the virus. Though the total number of COVID 19 patients is quite small when compared to other countries, the rate of increase is nevertheless alarming. The government decisions like a partial lock down in the country and recommendations towards social distancing are steps to move from Situation A to Situation B when hopefully there are no new cases reported. From situation B, the next progression is towards Situation C, where more and more people that have contracted the virus are cured through our health system and we finally have 0 cases of COVID 19. From flattening the curve that is Situation B to 0 patients can only be achieved without a vaccine if people undertake measures like social distancing and the government provide adequate medical response by effective quarantine areas and equipping the health sector to treat the COVID 19 patients.

## 5. Post COVID 19 global economic landscape

The section shows that in coming years, the best performing economies in the world like China, USA, UK, EU are to renegotiate their macroeconomic trajectories amid COVID 19. Due to the COVID 19 pandemic, the global trade has been momentarily halted while domestically lock downs of major metropolitans in the world have adversely affected both demand side and supply side economies with businesses looking for a government bail outs to survive the lock down. There is good news as the governments of the major economies have come up with early rescue packages for both financial and goods markets that will surely dampen the trough. However it all depends on the time frame that the pandemic lasts. If the pandemic prolongs for few months only, recession may not be a strong possibility where output may not be significantly reduced. A trillion dollars of government supported liquidity injected in the major economies of the world coupled with robust crises management on account of not only the economy but also the health sector will prove to serve well for these economies towards an early recovery and these countries may very well avoid a strong negative trends in output. (Please see the above diagram for illustrations) However still the best hopes for next five years is to get back to pre COVID 19 levels of output or slightly better. If the pandemic lasts for a year or two as being also projected by some governments like in USA, then a recession is inevitable whereas there will be shutdown of businesses, change in consumer behaviors. After the COVID 19 crises is over with introduction of a vaccine, the resilience and innovation potential in these economies would bounce back the economic activity and within year 2025, it is expected that output levels would at least be at the levels it was in 2019 (Min, 2020).

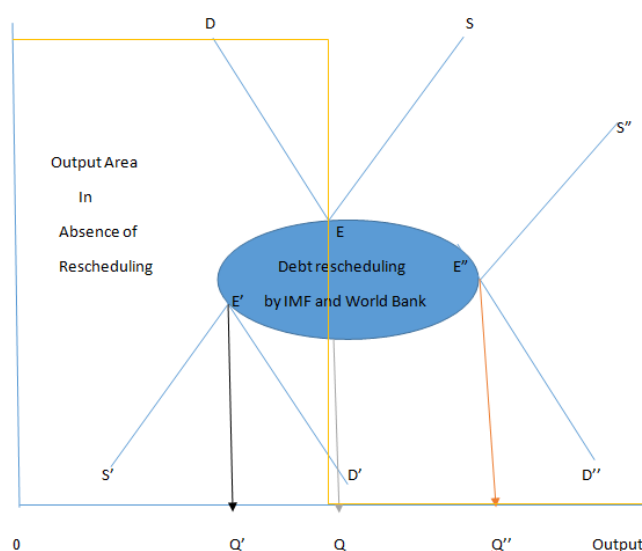


**Figure 3.** Will the Rescue Plan by the Governments Work?



## 6. COVID 19, debt and the global south

Economists around the world are undertaking intensive risk evaluations of negative fallout of COVID 19 pandemic that has engulfed the entire world including developing countries. The developing South is least equipped to fight the pandemic. It will be very timely measure to reschedule their debt so that the debt servicing obligations toward IFIs like IMF and World Bank are postponed and the governments of these countries have a significant fiscal and monetary space to fight the pandemic in order to channel their resources to offer healthy financial packages to the public and businesses alike. This step will also ensure a smoother pattern in consumption and production profiles in a recessing business cycle and consequently that would help prevent global supply chains to collapse – a valid possibility of the pandemic if it lasts for more than a year (Brown & Summers, 2020; and Reinhart & Rogoff, 2020).



**Figure 4.** *A Win Win Situation for the World*

The above diagram nicely illustrates the three different outcomes of COVID 19. There are three distinct demand and supply schedules for the world economy. Though the pandemic itself has been detrimental to the developed world's production and consumption patterns and it has put not only the developed North but the whole world on the path to a recession. However, the purpose of this paper is only to focus on the capacity and effect of Debt rescheduling in developing countries by IFIs like IMF and the World Bank on the output of developing countries in specific and larger world in general. Assume the world economy is at equilibrium point E where Q is the total production. The output level represents global GDP in December 2019. As we move further into the future with the drastic effects of COVID 19, both production and consumption patterns in the world may significantly reduce as businesses are shut down amid lock downs; unemployment rates soar; people have less incomes to carry out their regular consumption and savings. A healthy bail out packages amounting

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trillions of dollars by the developed world for their domestic economies can prevent a steep path to the trough. However, the negative fallout of the pandemic in a hyper globalized world cannot be isolated for only developed countries and there is a strong socio economic links between both developed and developing in determining higher or lower global GDP post COVID 19 through channels of exports and imports, inter connectivity between global supply chains and higher levels of financial integration. Thus a prolonged pandemic needs a unified international effort by global institutions to offer rescue packages for under developed and developing economies also. One immediate solution is to reschedule the debt of the underdeveloped South. Debt rescheduling would give ample space to the governments in these developing countries to implement effective fiscal response to the drastic macro-economic effects of the pandemic by sustaining medium to long term policies that include tax breaks and subsidies to the businesses to sustain economic down turn; and cash handouts to the poor that are in billions in number. Assuming that debt is rescheduled and the governments in developing countries implement effective fiscal and monetary policies to respond to the economic challenges of the pandemic; instead to moving to equilibrium  $E'$  that is showing towards a significant recession; the output in post COVID 19 scenario could be at a much higher global GDP levels at equilibrium point  $E''$  where the output is  $Q''$ .  $Q''$  levels of global GDP post COVID 19 pandemic shows that a consolidated domestic and international response has been undertaken by developed countries to address the challenges of COVID 19 where not only domestic economies are rescued but measures like debt rescheduling has enabled the developing world to maintain their international supply chains while consumers have retained their demand for higher levels of international production patterns (Woods & Batniji, 2020).

## **7. Dignity of work**

COVID-19 crisis has by now hit every developing and developed country by surprise. Partial lock downs to complete curfews are being implemented in most of the countries. However, we are in early days of the crises and it already has important lessons for how economic management is being done and shed light on the kind of economic policies with their application to the society should be promoted. First and foremost, the crises have brought back the dignity of work where corporations and governments are hugely relying on once considered the menial labor. The truck drivers, the delivery boys, health nurses, cleaning staff, are the ones who are front line personal to keep the economy running when most of the people are practicing self-isolation. This working class have long been ignored is economic systems that are hugely motivated from new classical capitalism. Be it a developed country or a developing country, most of the working class lives in the fringes of the economy. They are poorly educated; they belong to religious or ethnic minorities; they have less political rights than the majority to start with. The economic and social

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policies do not specifically cater to their issues. Yes, very generic economic rules like minimum wage, right to vote and possibility of political representation is there for reasons of minimum welfare measure but how the mainstream economy benefits the entrepreneur, the banker, the bureaucratic, military or political aristocracy is in no contrast to the economic and social benefits the working class gets. The working class is generally at the receiving end to economic, political, social uncertainties with minimal or no health insurance or right to education because they contribute less to per capita GDP. Their economic contribution is immense in working hours where most of them do double shifts to feed their families but the society measures their contribution in monetary value that is directly proportional to their menial and low wages. However, COVID -19 crises in making has brought fore the importance of their work and its inherent contribution to maintaining the life styles of more affluent. Once out of COVID-19 crises and that we shall overcome soon with help of this working class, economic thinking needs to reevaluate the low priority it gives to the contribution of working class. The economic welfare measures have been moving away from GDP and monetary valuations but economic policy making by the governments overwhelmingly indulge themselves to giving more weight to outcomes than effort. Capitalism has to re-negotiate its values from within and may very well reach out to systems of socialist economic thought more pro-actively than before. One way to go towards such lines is to make working class equal stakeholders to the businesses they work for by more generous economic reward allocation. Indeed, a new system of economic rewards need to be worked out between businesses and their workers whereby it is ensured that they are proportionally equal participants to the prosperity of a business or the economy. It also means that the workers need to be better educated and they should receive better health facilitation for themselves and their families. The new reward system can work out such details through working incentives or the government can ensure these outcomes for them. One way for a business to proportionally benefit the worker effort more generously is to make him/her a stakeholder in stock options with more lenient labor regulations that can accommodate temporary and permanent work force with pro effort incentive structures that can mean that such economic outcomes that help workers ensure the welfare for his/her household with positive results like better education, better health facilitation and higher living standards. A better educated and healthy workforce would ensure intangible outcomes like better self-esteem and satisfaction but may also be more closely related with the specific activity the business carries out through its supply chains or final production. A better economic arrangement between work force and the business can also serve and ensures better business ethics and higher accountability of the higher management. A level of transparency within businesses that give greater economic value to work effort is practiced in technology firms where majority of the work force is better educated to start with. This

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practice need to be applied to businesses of all kinds. If any thing, COVID-19 crises teaches us one thing and that is there is no work that should be considered as menial. That should hold true not only as a matter of the perceptions of the society but it should also result into better economic incentive structures of the working class population.

## **8. Risks and opportunities for Pakistan amid COVID 19**

The section explains the importance of early measures by PTI government and subsequent provincial governments to minimize the spread of COVID 19 virus to improve the chances for early recovery by pointing out risks that Pakistan's economy is facing if COVID 19 crises is prolonged and spread of virus is not contained in time. The longer the crises prevail, the stakes for Pakistani economy would increase many fold. Thus it is very important for the public and businesses to adhere to the government advice that shall enable the country to fight the COVID 19 crises in an effective manner.

When compared to China, Europe or the US, in Pakistan the COVID 19 has not yet transformed into a health pandemic. Despite this, a very active awareness campaign has been started by Pakistani Celebrities, Politicians and Media early on that is mostly supporting the government narrative to enable Pakistani society understand the severity of the situation. All this was very timely and all the more important because this COVID 19 health pandemic if not controlled in time has very drastic outcomes for Pakistani economy. Currently there is a partial lock down in the country where businesses and public activity is witnessing a momentary stand still. The frustration within businesses and public are mounting because of mostly economic reasons. However, one needs to understand that the partial lock down that the Pakistani businesses and public are facing is a very calculated preemptive measure against the future risks of COVID 19 if it transforms into a pandemic.

The long term risks of COVID 19 pandemic are the following.

1. Permanent shut down of businesses.
2. Steep rise in Inflation levels.
3. Severe shortage of liquidity
4. Steep devaluation of Pakistani Rupee
5. Steep Fall in economic activity within the country
6. A prolonged Recessionary Cycle in economic activity that may last for many years
7. A steep rise in unemployment levels
8. Risk of ethnic Conflict erupting in the peripheries due to prolonged periods of economic strain
9. Political and social Upheavals with a risk of class conflict

However, the PTI government lead by Imran Khan has rightly evaluated these risks that the country may face in the long run in wake of COVID 19 pandemic. The PTI government has come up with a very early and timely response that include

1. Subsidies to Export Sector
2. Tax break to prominent businesses and industry
3. Credit facility to the Businesses that retain their employees
4. Generous Cash transfers to the poor segments of the population
5. Delay in Credit obligations by 6 months for individual loans including credit cards, house financing etc.
6. Investment in Construction sector that is traditionally employ mostly unskilled labor
7. Increased focus on health sector Research and Development
8. Delay in Utility Bills obligations for the public

All these measures except for point 6 and 7 are temporary measures and should work as a strong signal for the public and businesses alike towards early crises management despite Pakistan has been faring well against the COVID 19 when compared to other parts of the world. This also show the seriousness of the government in preventing COVID 19 to transform into an economic crisis.

Having mentioned this, one should keep in mind that these measures are only effective when they are complemented if businesses and the public cooperate with the government. For example, measures like social distancing have to be practiced with all sincerity by the public. The businesses should not panic and retain their employees so that the economic crises are not extenuated. The COVID 19 crises demands unity of faith in the efforts of the government by businesses and the public. Assuming Pakistan is able to contain the COVID 19 pandemic in coming months, the opportunities of economic prosperity are also immense. There is a possibility of booming economic activity such that Pakistani economy picks up higher rates of growth nearing 5 to 6 percent of GDP by breaking the recessionary cycle within the year 2020.

## **9. Further economic response to COVID 19**

COVID 19 Pandemic is expected to change consumer behaviors globally creating gaps in demand for their multibillion dollar trade from regions like Asia. As of now Pakistani exports have witnessed a plunge with 70% fall in their levels only in April when compared to same period last year. A Pandemic that can last for a year suggests that Pakistani exports to regions like USA and EU will be curtailed significantly this year. In this case Pakistan needs to find local and regional markets for its export items by re orienting towards the potential markets in China and India. Steps to improve local commerce by investing in local entrepreneurial ventures, investments in infrastructure and promoting construction sector are also important steps that will enable Pakistani industry to survive the Pandemic.

Pakistan's export sector is the source to major foreign exchange earnings for the country. However, the export industry is under serious threat due to COVID 19 pandemic because markets in its major destinations like USA and EU have been closed as consumer activity is significantly hampered in

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these regions. A short term solution is to provide subsidies to the exporting industry where businesses can make their production cost effective for international competition. This measure is especially useful when demand falls down and international prices for exports markets in common destinations decrease. However, the international markets have not witnessed circumstances that are created by the COVID 19 pandemic in recent history where there is massive unemployment in USA and EU drawing similarities to the great depression of 1930s. These countries are expected to significantly curtail their imports and new era of de globalization has just begun. However, Pakistan is lucky to be situated in South Asia where on one hand the second largest economy China is an immediate neighbor that also happens to be the only country that has successfully overcome the Pandemic. Another economic power house is India that is Pakistan's Eastern neighbor and one of the few countries in the world where the effects of the Pandemic are mild at best. The recent surge and support to globalization has been initiated by China when countries like USA and Europe have been focusing more into creating domestic capacities. China is a huge market for Pakistani exports especially when world production levels are expected to fall down this year. First step for the government of Pakistan is to re orient its export sector towards Chinese markets. China also happens to have invested in Pakistan through CPEC and have already worked on re locating some of its industry to Pakistan. The next big economic market that provides great opportunities to our industrial growth is India. Pakistani government needs to speed up its diplomatic efforts to have improvement in bilateral relationship with its Eastern neighbor. Pakistan is already making products of many known international brands. As the lock down is lifted in India, Pakistan may trade more with its neighbor. However more importantly Pakistan needs to improve its domestic commerce activity and capacity. Pakistan is a 220 million people strong country. In these times when the process of de globalization has picked up momentum, China has already resorted on its domestic economy to fight the global recession. The growth estimates for Chinese economy are somewhat revised but the country is depending on its local consumer base to make up for fall in international demand. By focusing on improving local production and employment levels through industries like construction that should also include huge investments on infrastructure development would definitely break free Pakistani economy from negative effects of COVID 19 pandemic, consequent de globalization and a looming international recession. Pakistan may also invest in improving health infrastructure. There is a need to increase entrepreneurial activities in the country by channeling resources to the youth to come up with innovative ideas that can let the ball role for domestic economy and commerce at higher pace. Increasing regional trade and commerce, investments in domestic commerce and industry, investment in infrastructure development should be considered standard recipe for

avoiding international recession and provides remedies to the phenomenon of de globalization (Mlambo & Ngoma, 2020).

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